



Enhancements to Angus BREEDPLAN

December 2015

A number of enhancements have been implemented in the December 2015 Angus BREEDPLAN analysis.

These enhancements are part of the ongoing maintenance and improvement to the Angus BREEDPLAN genetic evaluation. In most cases, the enhancements are not expected to have any significant effect on the EBV ranking of animals.

Revisions to Calculation of Docility EBVs

With over 70,000 animals scored for docility since the introduction of the Trial Docility EBVs in March 2011, the Animal Genetics & Breeding Unit (AGBU) have reviewed the calculation of Docility EBVs.

Resulting from this review:

- The heritability of docility has been re-estimated and subsequently increased from 0.25 to 0.26;
- The analytical model has been modified to enable the analysis of half scores (i.e. docility scores of 1.5, 2.5, 3.5 and 4.5);
- The analytical model now pre-adjusts for age, age of dam and sex effects, in addition to contemporary group effect.

In association with the implementation of these revisions, the word "Trial" has been removed from the name of the EBV, with the Docility EBV now considered a standard EBV within the Angus BREEDPLAN analysis.

Re-estimated Parameters for Incorporation of GeneSeek Genomic Predictions

The Animal Genetics & Breeding Unit have conducted research to update the parameters that determine the emphasis placed on the genomic predictions calculated from the GeneSeek Genomic Profiler products (GGP-LD & GGP-HD) when incorporating this information in the calculation of Angus BREEDPLAN EBVs.

Resulting from this research:

- The number of traits for which GeneSeek GGP genomic predictions are incorporated into Angus BREEDPLAN has increased from 9 to 11, with genomic predictions now incorporated for Calving Ease Direct and Calving Ease Daughters.

- The emphasis placed on all GeneSeek genomic predictions within Angus BREEDPLAN has been revised for all traits.

The emphasis can be described as the accuracy of the EBV that would be generated if the EBV was calculated from only the genomic prediction (i.e. there was no other information recorded with Angus BREEDPLAN).

Table 1 : Accuracy of BREEDPLAN EBV Calculated from GeneSeek GGP Genomic Prediction Alone		
Trait	Old	New
Calving Ease Direct	-	21 %
Calving Ease Daughters	-	36 %
Birth Weight	64 %	49 %
200 Day Growth	39 %	36 %
400 Day Weight	32 %	42 %
Mature Cow Weight	45 %	32 %
Milk	33 %	30 %
Scrotal Size	60 %	41 %
Carcase Weight	27 %	26 %
Eye Muscle Area	54 %	33 %
Intramuscular Fat	40 %	35 %

Inclusion of Additional Genomic Information

In association with the updating of the parameters used to incorporate GeneSeek GGP genomic predictions, genomic predictions for any animals previously tested with the GeneSeek GGP-LD or GGP-HD products has now been included in the Angus BREEDPLAN analysis.

This represents GeneSeek genomic predictions for over 4000 animals, predominantly tested within either the Angus Sire Benchmarking Program or previous Beef CRC genotyping projects.

Note: Due to unexpected problems in the genotyping pipeline, genomic predictions from animals tested with the GeneSeek GGP products during 2015 have not yet been included in Angus BREEDPLAN. These genomic predictions will be included in Angus BREEDPLAN as soon as they are received from the Animal Genetics Lab at the University of Queensland.

Revisions to Minimum EBV Accuracy Reportability Thresholds

The minimum accuracy thresholds that must be met before EBVs are published within the Angus BREEDPLAN analysis have been considerably revised.

The previous minimum accuracy thresholds were quite complicated, with different thresholds utilised for different traits, and different thresholds subject to whether an animal had either performance recorded or genomic information included in BREEDPLAN. Further, some EBVs were published as a block, where all traits were published if any of the traits individually met the minimum accuracy threshold.

EBVs across all traits will now be published within Angus BREEDPLAN if they have an accuracy value of 25% or higher.

This change will result in a greater range of EBVs being published for most animals. It is however important to be aware that EBVs will now be published with a lower accuracy than what would have previously been required.

Availability of EBV Standard Error EBV Graph

A new graph has been made available when viewing animals within the EBV Enquiry facility on the Angus Australia website.

The new graph, known as the EBV Standard Error graph, provides an indication of the possible change in an animal's EBVs for each trait. The horizontal bar for each trait displays one standard error either side of the current EBV value, meaning that statistically, the animal's true breeding value will fall within the EBV range displayed in the graph on 7 out of 10 occasions.

		Breed Avg.	Acc
Calv. Ease Dir	Harder	-0.4	84%
		-2	
Calv. Ease Dtrs	Harder	-7.0	77%
		+5.2	
Gest. Len	Longer	+11.6	97%
		-1.3	
Birth Wt	Heavier	+12.5	98%
		+5.1	
200 Day Wt	Lighter	-5	97%
		+39	
400 Day Wt	Lighter	-6	97%
		+67	
600 Day Wt	Lighter	-12	97%
		+99	
Mat. Cow Wt	Lighter	-43	95%
		+115	
Milk	Lower	-18	91%
		+13	
Scrotal Size	Smaller	-3.8	96%
		+4.8	
Days to Calv	Longer	+17.8	65%
		-4.8	
Carcass Wt	Lighter	-24	92%
		+63	
Eye Musc Area	Smaller	-7.1	87%
		+6.2	
Rib Fat	Leaner	-6.5	86%
		+0	
Rump Fat	Leaner	-7.7	91%
		-0.2	
Retail Yield	Lower	-5.3	84%
		+1.1	
IMF	Lower	-3.7	91%
		+1	
Docility	Less	-29	81%
		-14	
NFI-F	Higher	-0.91	58%
		-0.43	

Updated EBV Standard Error Table

The standard error table that provides an indication of the possible change in Angus BREEDPLAN EBVs at different levels of accuracy will be updated shortly.

Specifically, standard errors will now be displayed for all traits, and for a greater range of accuracy values.

The updated standard error table will be made available from the Angus Australia website.

Updated Trial Structural Soundness EBVs

The Animal Genetics & Breeding Unit has recalculated Trial Structural Soundness EBVs for animals with structural score information recorded on the Angus Australia database.

Updated Trial Structural Soundness EBVs for individual animals can be viewed on the EBV Search facility on the Angus Australia website.

Updated EPD Information for Overseas Animals

A revised set of EPDs has been included in the December 2015 Angus BREEDPLAN analysis for imported American and Canadian Black and Red Angus animals.

Protocols Established for the Inclusion of Abattoir Carcase Information

Protocols have been established for the collection and submission of abattoir carcase information to Angus BREEDPLAN.

The new protocols are available from the Angus Australia website and provide clearer guidance to members interesting in collecting abattoir carcase information for genetic evaluation.

Revised Protocol for the Inclusion of Birth Weight Information

The protocols for the collection and submission of birth weight information to Angus BREEDPLAN have been amended.

Specifically, the protocols now explicitly articulate that the collection of birth weights using coronet band tapes are not suitable for Angus BREEDPLAN. All birth weights must be accurately recorded using appropriate weighing scales.

Increase in Maximum Number of Search Results Displayed on EBV Search Facility

Modifications have been made to increase the

maximum number of results displayed when conducting searches on the EBV Search facility on the Angus Australia website from 300 to 2000 animals.

The increase in the maximum limit will provide greater flexibility to members when conducting searches.

Further Information

To further discuss any of the enhancements that have

been implemented in the December 2015 Angus BREEDPLAN analysis, please contact Angus Australia's Breed Development & Extension Manager, Andrew Byrne on (02) 6773 4618 or via email andrew@angusaustralia.com.au.

Additional information regarding each enhancement is also available from the Angus Australia website.

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